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## High-Tech Teaching in a Low-Tech Classroom

By Jennifer L. Barnett

As 21st-century teachers, we are expected to help students master the technological tools they will use in college and the workplace. But in many districts, the one-computer classroom is not extinct. So how can we do a lot with a little? How can we best use limited resources to support learning and familiarize students with technology?

A few general tips:

- You may need to get creative with lesson structure so that students have the time necessary to interact productively with new tools.
- Take advantage of any time that your students have access to a computer lab with multiple computers. Consider using such opportunities to guide students in getting to know a half dozen tools, rather than working on a single assignment. While it may seem like "technology for technology's sake," this investment will pay off later, when there is limited time for students to use the tools on your one or two classroom computers.
- Relieve yourself from the pressure of knowing all the ins and outs of every tool. Instead, empower your students by challenging them to become experts who teach one another (and you!) how to use new programs.

Here are some methods for organizing the use of limited tech resources to support student learning.

### "Pass it On" Buddy Method

Students assist one another in creating digital products that represent or reflect their new learning. It's a great way to spread technological skills in a one-computer classroom.

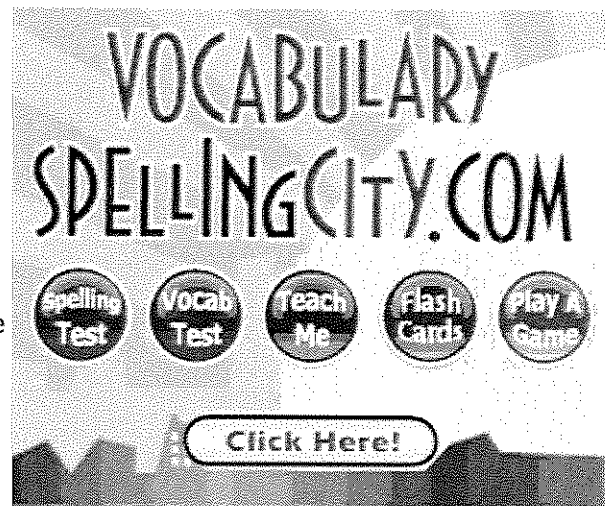
#### *How does it work?*

Choose and prepare the best technological tool to fit your learning target. Students complete an assignment on paper (for example, writing text for a blog entry). Teach one student to translate their work into a digital product. Schedule a buddy system: Student A teaches student B, student B teaches student C, and so on. Allow students some time to review one another's work or share the best examples with the whole class.

#### *Tips and Tricks:*

- This method takes time. If you allot 20 minutes each day for buddy time and each student

[Back to Story](#)



needs five minutes, you'll need five days for a class of 20 students. (You might need extra "play time" if students have not had the opportunity to become familiar with the tool.)

- Students should have the "bones" of the assignment completed on paper prior to their assigned buddy/computer time.
- I like to use this method when students are working in groups for entire class periods or large chunks of the day. You can also schedule some students to use the computer after tests/quizzes or during silent reading time.

*Suggested tools:*

**Blogging, VoiceThread, Voki, Blabberize, Bitstrips, Pixton, Xtranormal**

### **Group Consensus Method**

Small groups of students engage in dialogue on a particular topic, then a member uses a digital tool to report on the group's consensus.

*How does it work?*

Choose the appropriate technology for your learning target and prepare the digital tool. Assign a task to small groups of students—answering a question or summarizing, analyzing, or evaluating content. After a certain period of time, ask one member of each group to use the class computer and a tech tool to report. Then display the results for the class.

*Tips and Tricks:*

- Use this method as a bell-ringer activity at the beginning of class.
- Alternatively, close a class by asking students a provocative question and having a member of the group report using a tech tool. The next day, at the beginning of class, you can review the results.

*Suggested tools:*

**Polls, Surveys, Wallwisher, Pirate Pad**

### **Rotating Scribe Method**

Each day, one student uses technology to record the lesson for other students.

*How does it work?*

Model the process by creating a record of some of your lessons, using a variety of tools. Then ask for a student volunteer to begin the process of rotating student scribes. Let the student choose the tool. (You may need to provide some practice time if the tool is unfamiliar, perhaps before or after school.) Then have the student record what happened in class: activities, explanations, student questions, discussion, etc. Review the scribe's work after class. Begin class the next day by asking students to "evaluate" the scribe's report.

*Tips and Tricks:*

- Allow for creativity. This will motivate students to listen and find interesting ways to report on what happened. For example, you could encourage an artistic student to draw, then scan the drawing and use MagMyPic to add details about the lesson.
- Humor can be a great way for students to remember a lesson. Let them have fun with this!

- Taking notes on a wiki or blog can be very effective—and is especially helpful for helping absent students to "catch up."

*Suggested tools:*

**Blogs, wikis, Pixton, Bitstrips, Wordle, Tagul, Tagxedo, MagMyPic, iMovie, Movie Maker, PhotoStory, Prezi, Quizlet, Popplet, Our Story**

### **Whole Class Method**

Teachers in one-computer classrooms often invite large groups of students to gather around the computer. Here are a few suggestions for making the most of these activities.

*Tips and Tricks:*

- Make sure that content is highly engaging. Genuine interest will help students to be more patient with the challenges of the whole-group approach.
- Provide students with links to the content on your class webpage, wiki, blog, or handout so that they can revisit the sites from home or the library. You might consider emailing the links to students and parents in a class newsletter. This allows students the chance to become even more familiar with the content and tools—and perhaps to share their learning with others.
- Consider dividing your group in half. Engage half of the class in a non-tech assignment while the other half interacts with a tech tool (game, video, interactive quiz, etc.) Swap groups. Then encourage the two groups to share results, scores, impressions, or other information with each other.
- Provide time for individual students to explore resources (websites, tools, games, videos), extending lessons beyond what is covered in class. Then, at the end of the unit, have a resource "show and tell" in which each student shares a favorite. Allow the class to vote on the best resource and reward the student for his or her discovery. Post the resulting links on your class Web page so students can further explore on their own.

*Suggested tools by subject:*

**English** – Grammar Girl, ReadWriteThink, Shmoop, Noodle Tools, Grammar/Language Games

**Social Studies** – Hippocampus, Map Games, Interactive History Quizzes, The People History, Smithsonian History Explorer

**Math** – Khan Academy, Brightstorm, Math TV, Hippocampus, Ask Dr. Math, Illuminations

**Science** – Khan Academy, Brightstorm, Anatomy Arcade, Science Vocabulary Hangman, Xpeditions

**All Subjects** – Discovery Education, Brain Pop, Flocabulary, Thinkfinity, How Stuff Works, Quizlet, Worldometers

When we are faced with limited resources, it is tempting to throw up our hands and say, "I just don't have what I need to do this!" However, do not underestimate your ability to make it work. If you want to deepen student learning by integrating technology, you can use creativity, patience, and careful planning to achieve that goal. Your resourcefulness can enable students in a low-tech classroom to experience high-tech teaching and learning.

Are you already making the most of a one-computer classroom? I hope you'll share your ideas, tips, and resources in the comments.

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*After serving as a technology integration specialist for two years, Jennifer L. Barnett is returning to the classroom as an English and history teacher at Fayetteville High School in Talladega County, Ala. Jennifer, who has more than two decades of teaching experience, is a member of the **Teacher Leaders Network** and a co-author of **TEACHING 2030: What We Must Do for Our Students and Our Public Schools...Now and in the Future**. She blogs about the teaching life at *Reflect to Redirect* and manages a *class wiki* and *tech help wiki*.*

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